

# Kidney health matters: a global imperative for public health

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Kidney disease has long been overshadowed by other global health priorities. The World Health Organization (WHO) lists heart disease, stroke, cancer, diabetes, and chronic lung disease as the top five non-communicable diseases (NCDs) causing premature death and disability ([https://www.who.int/health-topics/noncommunicable-diseases#tab=tab\\_1](https://www.who.int/health-topics/noncommunicable-diseases#tab=tab_1) accessed 3 March 2024) (Fig. 1a). When the European Commission in its current legislation decided to focus more on other NCDs as well as cancer, they selected only four disease strands: cardiovascular diseases, diabetes, respiratory diseases, and neurologic diseases (<https://ec.europa.eu/info/research-and-innovation/research-area/healthresearch-and-innovation>) but not kidney diseases (Fig. 1b). Now, a joint statement by the International Society of Nephrology, the European Renal Association, and the American Society of Nephrology aims to create a major turning point in the recognition of kidney disease as a major player in the NCD landscape [1]. This statement is also supported by other societies, namely the Asian Pacific Society of Nephrology, the African Society of Nephrology, the Latin American Society of Nephrology and Hypertension, and the World Heart Federation. It calls for the inclusion of kidney disease in the WHO list of leading NCDs causing premature mortality and is aligned with the recent cardio-kidney-metabolic statement by the American Heart Association [2].

Why is this joint statement significant? Kidney disease has a high global prevalence and a profound impact on public health and the environment. However, it has been overlooked for too long. This lack of prioritization has resulted in low awareness, inadequate allocation of resources, and limited access to life-saving care, particularly in low- and middle-income countries (LMICs).

Kidney disease is a significant global health concern. Currently, 850 million people, >10% of the world's population, are estimated to suffer silently from kidney disease; most of them unaware of their condition and unable to access prevention strategies or life-saving treatments [3]. Additionally, kidney disease prevalence is steadily increasing. According to the Global Burden of Disease study, the global prevalence of chronic kidney disease (CKD) increased by 33% from 1990 to 2017 [4]. Demographic changes, the obesity epidemic, and the impact of climate change are predicted to worsen this trend, highlighting the pressing need for action.

According to WHO kidney disease is now the 10th leading risk factor for mortality worldwide. It has a negative impact on mortality due to cardiovascular disease, infection (as illustrated by

the COVID-19 pandemic), and cancer, among others [5]. Additionally, millions of people die yearly worldwide because of lack of access to kidney replacement therapy (KRT). Of note, KRT does not fully address the premature mortality associated to CKD and life expectancy on KRT may be decades shorter than in the general population, especially in women [6]. Kidney disease also causes significant morbidity and decreases quality of life, with symptom burdens comparable to or surpassing those of terminal malignancies. Indeed, CKD jumped from the 29th to the 18th global cause of disability over the past three decades [4].

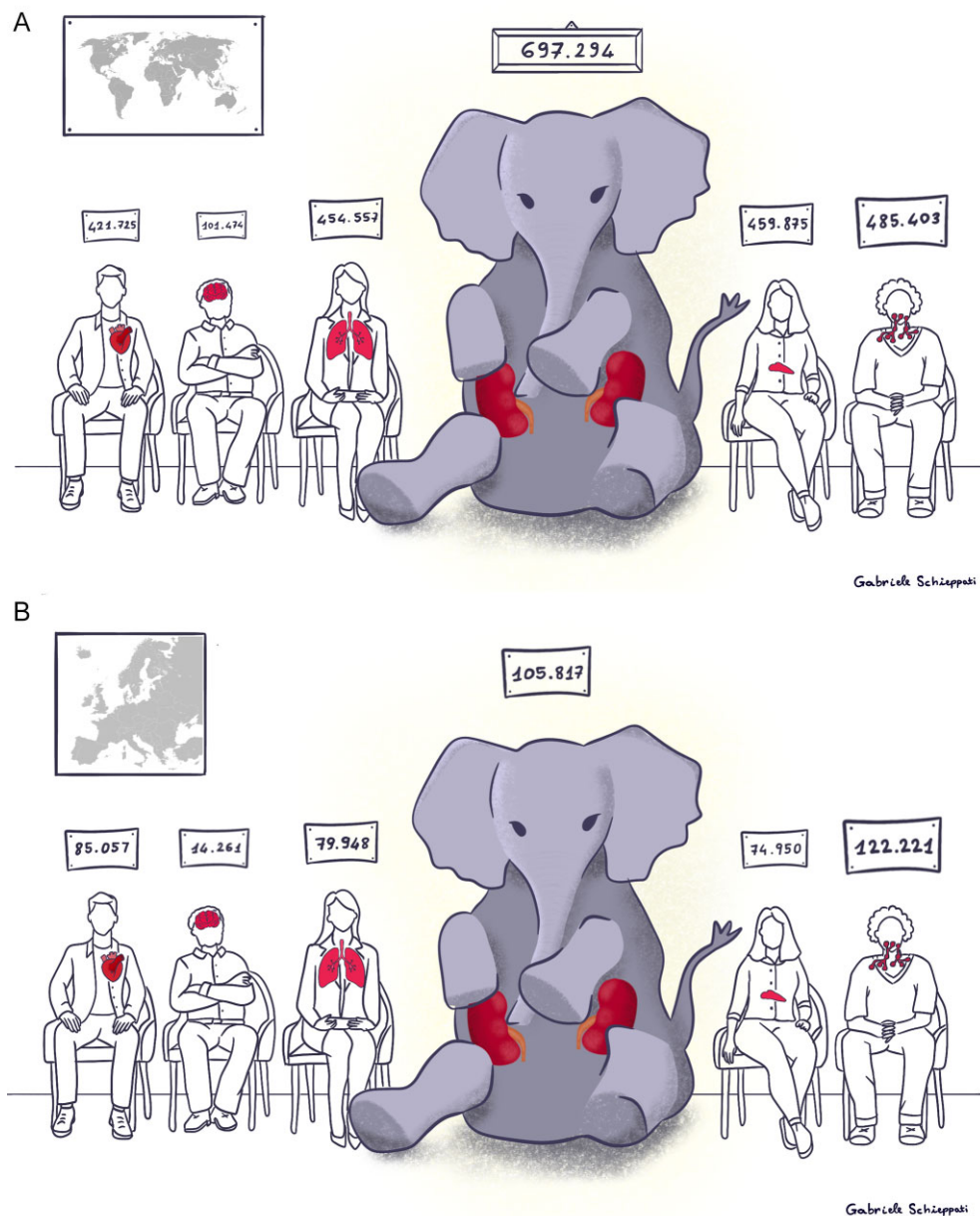
The economic and environmental impact of kidney disease is significant. Managing kidney disease, especially when KRT is required, places a substantial burden on healthcare systems in high-income countries. The cost burden for individuals in LMICs is even more concerning. In many low-resource settings, individuals are responsible for death, which, added to CKD-associated lower productivity, can accelerate of the individual and further impoverish families, perpetuating a cycle of deprivation. In this regard, CKD disproportionately affects disadvantaged populations within LMICs, further exacerbating existing health inequities. Limited access to healthcare services, including diagnostic tools, medications, and specialized care such as nephrology services, dialysis facilities, and kidney transplantation, often exacerbates the burden. KRT by dialysis is a resource-intensive procedure that has a significant water consumption and carbon footprints and generates tons of plastic waste. If concerted efforts are not made to address kidney disease, the costs and environmental impact will continue to rise. This will further strain already fragile healthcare systems and environments and hinder efforts to achieve universal health coverage.

Despite the well-developed healthcare systems in Europe, CKD remains a significant challenge in the region. Several factors contribute to this ongoing challenge. First, its high and increasing prevalence, with millions affected by conditions predisposing to CKD, aging, and lifestyle factors such as poor diet and lack of exercise. Older adults bear the greatest burden of CKD and are at highest absolute risk for complications such as cardiovascular disease and heart failure. Underdiagnosis of CKD in older adults can have serious consequences, as CKD can negatively affect physical and cognitive function, medication safety, and cardiovascular prognosis. Access to kidney disease care is also heterogenous, with disparities existing in screening, prevention and early treatment of CKD, and access to KRT, particularly in rural or socioeconomically

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**Figure 1:** CKD: The elephant in the room. CKD is the elephant, and shares the room with five other non-communicable diseases. On top of each, there is the global prevalence in thousands according to the Institute for Health Metrics and Evaluation (IHME): <https://vizhub.healthdata.org/gbd-compare/>. Diseases from left to right: heart diseases, stroke, pulmonary diseases, CKD, diabetes mellitus, and cancer. (a) World perspective. (b) European perspective. Drawn by Gabriele Schiappati.

disadvantaged areas and less privileged populations [7]. Resource allocation presents another challenge due to budget constraints and competing healthcare priorities, potentially limiting investments in prevention programs and renal care infrastructure.

The management of kidney disease requires a multifaceted integrated approach that extends beyond medical interventions to address the causes and impact of CKD. Effective management of chronic conditions such as diabetes, hypertension, cardiovascular disease, and also cancer is necessary but not sufficient for CKD prevention: further improvements are needed in prevention and early detection efforts and in addressing the root causes of kidney disease, including environmental degradation (e.g. global warming, pollution), socioeconomic inequities and determinants of health, and healthcare disparities. Policymakers, healthcare

providers, and communities can work together to prioritize kidney health and implement evidence-based interventions, alleviating the burden of CKD. Additionally, continued investment in research and innovation is essential to develop new risk stratification tools and treatments, and improve patient outcomes through collaboration between international organizations, academia, healthcare institutions, and industry.

Efforts should focus on public health interventions for primordial and primary prevention as highlighted by the recent KDIGO consensus conference on Maintaining Kidney Health and Preventing CKD (Rome, December 2023). Primary prevention has been instrumental in improving outcomes in cardiovascular and cerebrovascular disease. However, nephrology has lagged behind. It is essential to improve access to health care and to identify

individuals at high risk who may benefit from prevention strategies, as well as to identify CKD early to maximize the efficacy of treatment, slowing disease progression and reducing its impact on individuals and communities. Universal screening for early CKD is feasible by testing albuminuria and should be the ultimate goal [8]. Meanwhile, decades-old guidelines recommend CKD screening (i.e. at least eGFR and albuminuria) for persons with risk factors, such as hypertension, diabetes, and/or cardiovascular disease, although implementation is suboptimal, especially outside diabetes. Additionally, screening should be extended to persons with other risk factors for developing CKD, including older age, race/ethnicity, other systemic diseases (e.g. systemic immunological diseases or chronic infections), family history of kidney disease or other genetic risk factors, low birth weight/prematurity, limited access to healthcare or low socioeconomic status, high-risk occupations and environmental exposures, prior acute kidney injury, preeclampsia, exposure to nephrotoxins, and obesity [9]. Special attention should be paid to rare kidney diseases, which are largely underdiagnosed and particularly prevalent in the pediatric population [10]. In LMICs, particularly in communities with limited environmental regulations or oversight, environmental factors that contribute locally to the development and progression of CKD, such as exposure to toxins, industrial pollutants, and inadequate access to clean water, should be the focus of special public policy actions.

Fortunately, there is reason for optimism as our understanding and treatment of kidney disease has significantly advanced. New therapeutic agents on top of RAS inhibitors, such as SGLT2 inhibitors, GLP-1 receptor agonists, and mineralocorticoid receptor antagonists, slow CKD progression, improve outcomes, and even maintain kidney health, i.e. provide primary prevention of CKD in at least some scenarios [11, 12, 13, 14], although they are far from curing the disease in contrast to e.g. some neoplasms. Overall, it has become clear that early identifications of individuals at high risk of CKD or already having CKD is actionable and this can significantly reduce the burden of disease and prevent complications. A potential barrier is the short-term budget impact of new drugs to maintain the health of the kidneys and/or to slow down the decline in kidney function. Unfortunately, these new prevention therapies will mostly be used in high-income countries, while most LMICs still struggle to provide universal healthcare, including KRT or all. New health policies and agreements with pharmaceutical companies are urgently needed. Investment and innovation are needed to make the same progress for kidney diseases as has happened for cancer, cardiovascular diseases, or diabetes.

The addition of kidney disease to the WHO's list of major NCD drivers would be a crucial step toward raising awareness, mobilizing resources, and implementing effective interventions on a global scale. Likewise, EU Health priorities for NCDs should be extended to CKD ([https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_1345](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_1345)). By prioritizing kidney health, we can save lives and contribute to achieving the Sustainable Development Goals (<https://www.who.int/europe/about-us/our-work/sustainable-development-goals> accessed 3 February 2024). This includes goals related to poverty reduction, gender equity, water security, economic growth, reducing inequalities, and acting on climate change.

In summary, the joint statement released by the global kidney care community, led by the International Society of Nephrology, European Renal Association, and American Society of Nephrology, is a significant step forward in the worldwide fight against kidney disease. By placing kidney health on the global health agenda, we have the chance to save lives, reduce suffering, and

promote health equity. Nephrology has evolved from replacing kidney function to preventing kidney failure. A needed next step is preventing the development of CKD by improving kidney health. However, achieving this goal requires continued commitment, collaboration, and investment from governments, healthcare systems, civil society, and the private sector. It is crucial to be proactive in maintaining kidney health, considering the shifting demographics and accumulating risks. Together, we can prevent kidney disease from becoming the fifth most prevalent driver of premature mortality in 2040, as recently projected, and cultivate a healthier and more equitable world for future generations.

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## CONFLICT OF INTEREST STATEMENT

None declared

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